

CLAIMS

1. Arrangement in a counter rotating propulsion system (CRP), which propulsion system comprises an aft propeller (22) installed on a rotatable thruster (18) and a forward propeller (6) installed on a shaft (8) or on a thruster, which propellers are arranged on the essentially same axial line, whereby the aft propeller (22) and the forward propeller (6) have opposite directions of rotating and the aft and forward propellers are arranged against each other, the propellers having a hub with a cap, **characterized** in that at least two equally distributed flow plates (28) are arranged on the cap (30) of the forward propeller (6) and that the flow plates (28) are radially projecting from the cap (30).
- 10 2. Arrangement according to claim 1, **characterized** in that the forward hubcap (30) is well-streamlined.
3. Arrangement according to claim 1 or 2, **characterized** in that the forward hubcap (30) have diameter to length ratio not higher than 2.
- 15 4. Arrangement according to any of the claims 1 to 3, **characterized** in that the flow plates (28) are straight and similar to each other.
5. Arrangement according to any of the claims 1 to 4, **characterized** in that the number of the flow plates (28) is independent of the number of the blades (12) of the forward propeller (6) and the position of the flow plates (28) is independent of the position of the blades of the forward propeller.
- 20 6. Arrangement according to any of the claims 1 to 5, **characterized** in that the diameter of the tip edges of the plates (28) is in the range of 0,4 – 2 times the maximum hub diameter.
7. Arrangement according to any of the claims 1 to 6, **characterized** in that the plates (28) are integrated to the cap (30).
- 25 8. Arrangement according to any of the claims 1 to 6, **characterized** in that the plates (28) are fixed to the cap (30) by welding or by bolts.
9. Arrangement according to any of the claims 1 to 8, **characterized** in that the aft propeller (22) is turnable and the aft propeller (22) is used to propel and to steer the vessel.

10. Arrangement according to any of the claims 1 to 9, characterized in that the aft propeller (22) being after the forward propeller (6) has a streamlined cap (26).
11. Arrangement in a counter rotating propulsion system (CRP), comprising an aft propeller (22) installed on a rotatable thruster (18) and a forward propeller (6) installed on a shaft (8) or on a thruster, whereby the aft propeller and forward propeller are arranged on the essentially same axial line, the aft propeller (22) and the forward propeller (6) have opposite directions of rotating and the aft and forward propellers are arranged against each other, wherein the propellers have a hub with a cap, whereby at least two equally distributed flow plates (28) are arranged on the cap (30) of the forward propeller (6) and 10 the flow plates (28) are radially projecting from the cap (30).